PETROLEUM ENGINEER PUBLICATIONS

1961 ANNUAL INDEX FOR VOLUME XXXIII

Petroleum Management

SUBJECT INDEX

TITLE OF ARTICLE AND AUTHOR	MONTH
ECONOMICS Industry in Good Shape for '61, Ernestine Adams	Jan.
Your Stake in the World Market (Reprint from U. S. Steel News)	Jan.
Lessons of the Oil Glut, Helmut J. Frank	Feb.
What Made Oil Company Profits Go Up?, Ernestine Adams	Mar.
Industry Bucks Recession, Ernestine Adams	May
Economies, Volume Push Profits Higher, Ernestine Adams	June
Operations for 75 Companies, Ernestine Adams	Aug.
Profit Margin Widens, Ernestine Adams	Sept.
Global Data on 135 Areas, Ernestine Adams	Sept.
USSR Keys Industrial Growth to Gas, Ernestine Adams	Oct.
Forecast: 1962 Demand Up 3.2%, M. P. Murdock	Nov.
Price Wars Hit Third Quarter, Ernestine Adams	Dec.
EDUCATION AND TRAINING Old Oil Names Disappear Under Streamlining, Max B. Skelton	Jan.
How Can Scientists Keep Up With Science?, E. V. Murphree	
Training Program on Equipment Use, Herman Gottwald	July
Safety Is What You Make It	Nov.
Lectures in Science	Dec.
FOREIGN The Bristling Battle of Mattei, Ernestine Adams	Feb.
Greece Oil Operations Pulling Up Almost By Bootstraps, Ernestine Adams	Mar.
Australia -- Best Place to Have an Oil Well, J. M. Rayner	Apr.
Australian Directories	Apr.
International Oil and Gas Take to Pipelines (Part 1 - 14th Annual World Round-Up), Ernestine Adams	June
Political Decisions Burden International Oil Industry (Part 2 - 14th Annual World Round-Up), Ernestine Adams	July
Soviet Oil Exports in 1965 May Reach 900,000 B/D, I. H. Cram	July
World Production of Crude Petroleum by Countries	Nov.
The Bigger Egg	Nov.
Natural Gas Invades Europe's Energy Market, R. K. Nemitz	Dec.
INDUSTRIAL RELATIONS Board Chairman Expects Action in Safety, Too!, Senator Robert S. Kerr	May
A Fresh Look at Motivation, A. Q. Sartain	Aug.
LEGISLATION We Can Have Better Highways, Senator Harry Byrd	Jan.
FPC Chairman Sets Ground Rules, Ernestine Adams	Oct.
Washington Course Points to Stiffer Controls, E. E. Halmos, Jr.	Nov.
Reasons for a Fuels Study, John M. Kelly	Dec.
Do We Need a Fuels Policy?, W. C. Norman	Dec.
MANAGEMENT METHODS Management Can Aid Professionalism, L. C. Kemp, Jr.	Feb.
Identify Your Shortcomings, John D. Quinton	Feb.
Perils of Petroleum, Theodore Levitt	Aug.
How to Conduct Conferences, Kent Williams	Sept.
Identify Your Shortcomings, E. A. Neu	Oct.
Professionalism: Who's Right?	Oct.
Managerial Paradox: The Thinker and the Doer, Leon C. Megginson	Nov.
Precepts of Management, W. Dow Hamm	Nov.
Merit Rating the Engineer, Robley D. Stevens	Dec.
OPERATIONS Propane Flame Cuts Steel Quickly	Feb.
Helium Waste Called Serious	Nov.
ORGANIZATIONS What's Ahead for the API?, Ernestine Adams	Nov.
Desk & Derrick Marks 10th Year	Nov.
PERSONNEL This is What He Means	Mar.
How Good is Your Guard?, John Hinds	Apr.
The Rebel -- Your Pal?, David J. Doran	May
Nationals Get Job Advantages (An Interview With A. P. Blair), Ernestine Adams	Sept
People in Petroleum, Ernestine Adams	Sept
RESEARCH Decreasing Greasing	May
SUPPLY AND DEMAND POL Logistics Readied for Future Battlefields, Colonel Paul B. Tonks	Jan.
NPC Reports on U.S. Capacity	June
Energy in the USA, 1975, Sam H. Schurr and Bruce C. Netschert	Sept

AUTHOR INDEX

AUTHOR	MONTH
Adams, Ernestine Industry in Good Shape for '61	Jan.
The Bristling Battle of Mattei	Feb.
Greece Oil Operations Pulling Up Almost by Bootstraps	Mar.
What Made Oil Company Profits Go Up?	Mar.
Industry Bucks Recession	May
International Oil and Gas Take to Pipelines	June
Economies, Volume Push Profits Higher	June
Political Decisions Burden International Oil Industry	July
Operations for 75 Companies	Aug.
Nationals Get Job Advantages	Sept.
Profit Margin Widens	Sept.
People in Petroleum	Sept.
Global Data on 135 Areas	Sept.
USSR Keys Industrial Growth to Gas	Oct.
FPC Chairman Sets Ground Rules	Oct.
What's Ahead for the API	Nov.
Price Wars Hit Third Quarter	Dec.
Byrd, Senator Harry We Can Have Better Highways	Jan.
Cram, I. H. Soviet Oil Exports in 1965 May Reach 900,000 B/D	July
Doran, David J. The Rebel -- Your Pal?	May
Frank, Helmut J. Lessons of the Oil Glut	Feb.
Gottwald, Herman Training Program on Equipment Use	July
Halmos, E. E., Jr. Washington Course Points to Stiffer Controls	Nov.
Hamm, W. Dow Precepts of Management	Nov.
Hinds, John How Good Is Your Guard?	Apr.
Kelly, John M. Reasons for a Fuels Study	Dec.
Kemp, L. C., Jr. Management Can Aid Professionalism	Feb.
Kerr, Senator Robert S. Board Chairman Expects Action in Safety, Too!	May
Levitt, Theodore Perils of Petroleum	Aug.
Megginson, Leon C. Managerial Paradox: The Thinker and The Doer	Nov.
Murdock, M. P. Forecast: 1962 Demand Up 3.2%	Nov.
Murphree, E. V. How Can Scientists Keep Up With Science?	Mar.
Nemitz, R. K. Natural Gas Invades Europe's Energy Market	Dec.
Quinton, John D. Identify Your Shortcomings	Feb.
Neu, E. A. Identify Your Shortcomings	Oct.
Norman, W. C. Do We Need a Fuels Policy?	Dec.
Rayner, J. M. Australia -- Best Place to Have an Oil Well	Apr.
Sartain, A. Q. A Fresh Look at Motivation	Aug.
Skelton, Max B. Old Oil Names Disappear Under Streamlining	Jan.
Stevens, Robley D. Merit Rating the Engineer	Dec.
Tonks, Colonel Paul B. POL Logistics Readied for Future Battlefields	Jan.
Williams, Kent How to Conduct Conferences	Sept.

SUBJECT INDEX

TITLE OF ARTICLE AND AUTHOR	MONTH
AIR AND GAS DRILLING — Forecast and Trends in Air/Gas Drilling, Robert W. Sneed	Jan.
Atlantic Uses Small Portable Air Drill in Artic for Stratigraphic Exploration	Jan.
Production Research Must Increase Productivity in the 60's, L. E. Elkins	Jan.
Air Drilling for Abo Pay, Clarence S. Adams	Apr.
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
DRILLING BITS — Production Research Must Increase Productivity in the 60's, L. E. Elkins	Jan.
Where Do We Stand in Slimholes Today	Jan.
Air Drilling in Abo Pay, Clarence S. Adams	Apr.
Bit Uses Replaceable Cutter Cones	Dec.
BRAKING EQUIPMENT — Dynamic Stresses in Long Drill Pipe Strings	May
CASING — Air Drilling for Abo Pay, Clarence S. Adams	Apr.
CEMENTING — Oil Well Cementing Practices and Materials, Phil C. Montgomery and Dwight K. Smith	May
What We're Learning From Drilling Steam Wells (2 parts), Arthur Langton, E. T. Anderson	Oct.
COMPLETION PRACTICES — Permanent-Type, Multiple, and Tubingless Completions, T. A. Huber and C. B. Corley, Jr. (Part 1)	Feb.
(Part 2)	Mar.
Chemical Treatment for Well Stimulation (Modern Well Completions Series - Part 2), Francis N. Harris	Apr.
Oil Well Cementing Practices and Materials, Phil C. Montgomery and Dwight K. Smith	May
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
Quadruple Completion Made Inside 5 1/2-in. Lining, Gordon W. Taylor	Aug.
Texas' Deepest Producer Has Heaviest Tubing, Wallace B. Johnson	Aug.
First Quadruple for North Louisiana	Oct.
Slim Holes Save in South Louisiana, Frank Perkins, D. B. McClinton	Nov.
Save With Slim Holes in Hard Rock Country, Frank M. Pool	Nov.
DEEP DRILLING — DST Made at 18,000 Feet Without A Hitch, Russell W. Holman	Jan.
Sidetracks Mark Tough Road In Deep Oklahoma Well, Lowell A. Murphy	Mar.
John W. Mecom Prepares for a 26,000 Foot Well, J. E. Kastrop	Mar.
DIRECTIONAL DRILLING — Where Do We Stand In Slim Holes Today? Sidetracks Mark Tough Road In Deep Oklahoma Well, Lowell A. Murphy	Jan. Mar.
DRILLING CONTRACTORS — Air Drilling for Abo Pay, Clarence S. Adams	Apr.
What's Ahead in Contract Drilling?, J. E. Kastrop	Oct.
DRILLING COSTS — Production Research Must Increase Productivity in the 60's, L. E. Elkins	Jan.
Trends in Drilling Costs: Today and Tomorrow, O. E. Mechem	Jan.
Air Drilling for Abo Pay, Clarence S. Adams	Apr.
What's Ahead in Contract Drilling, J. E. Kastrop	Oct.
Slim Holes Save in South Louisiana, Frank Perkins, D. B. McClinton	Nov.
Save With Slim Holes in Hard Rock Country, Frank M. Pool	Nov.
DRILLING PRACTICES — Production Research Must Increase Productivity In the 60's, L. E. Elkins	Jan.
Where Do We Stand in Slim Holes Today?	Jan.
Air Drilling for Abo Pay, Clarence S. Adams	Apr.
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
What We're Learning From Drilling Steam Wells, Arthur Langton, E. T. Anderson (2 parts)	Oct.
ENGINES AND MAINTENANCE — Rotary Piston Is New Idea in Engines	Jan.
EQUIPMENT — Air Drilling for Abo Pay, Clarence S. Adams	Apr.
How to Evaluate Mud Desanding, R. J. Duran	Aug.
EQUIPMENT DEVELOPMENT — What's New In Patents?	Aug.
A Look at Rocket Flame Drilling	Oct.
Threadless Drill Pipe Tool Joint, J. E. Kastrop	Oct.
Bit Uses Replaceable Cutter Cones	Dec.
FISHING TOOLS AND TECHNIQUES — Super-Deep Fishing Job, Walter A. Hogan	Mar.
GEOGRAPHIC — Geology of the Philippine Islands, Benjamin M. Gazan	Jan.
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
Argentina Bets Heavy On San Jorge Basin	Aug.
LOGGING — Tools to Log and Perforate Those Hot Holes	Aug.
How to Interpret Acoustic Bond Logs, C. H. Thurber, E. G. Crow, B. F. Latsen	Nov.
Digital Computers: New Exploration Tool, V. S. Tuman, Dorothy Bollman	Nov.
Don't Overlook Permeability Profiles, Wallace B. Johnson	Dec.
MARINE DRILLING — Special Rig Tackles Deep Workovers, Lowell A. Murphy	Dec.
METHODS — A Look at Rocket Flame Drilling	Oct.
MUDS — Production Research Must Increase Productivity in the 60's, L. E. Elkins	Jan.
Chromates Stabilize Shale Control Muds at High Temperatures, Walter J. Weiss	Mar.
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
What We're Learning From Drilling Steam Wells, Arthur Langton, E. T. Anderson (2 parts)	Oct.
OUTLOOK — Forecast and Trends in Air/Gas Drilling, Robert W. Sneed	Jan.
Production Research Must Increase Productivity in the 60's, L. E. Elkins	Jan.
Trends in Drilling Costs: Today and Tomorrow, O. E. Mechem	Jan.
What's Ahead in Contract Drilling, J. E. Kastrop	Oct.
What's Ahead in Contract Drilling, J. E. Kastrop	Nov.
PENETRATION, RATE OF — Air Drilling for Abo Pay, Clarence S. Adams	Apr.
PERFORATING — Tools to Log and Perforate Those Hot Holes	Aug.
Tools for Perforating Casing, F. O. Bohn	Nov.
RESEARCH — What We're Learning From Drilling Steam Wells (2 parts), Arthur Langton, E. T. Anderson	Oct.
A Look at Rocket Flame Drilling	Oct.
Threadless Drill Pipe Tool Joint, J. E. Kastrop	Oct.
TESTING — DST Made at 18,000 Feet Without A Hitch, Russell W. Holman	Jan.
SLIM HOLE DRILLING — Where Do We Stand in Slimholes Today? Permanent-Type, Multiple, and Tubingless Completions, T. A. Huber and C. B. Corley, Jr.	Jan. Mar.
Slim Holes Save in South Louisiana, Frank Perkins and D. B. McClinton	Nov.
Save With Slim Holes in Hard Rock Country, Frank M. Pool	Nov.
TUBULAR GOODS — Dynamic Stresses in Long Drill Pipe Strings, Dr. Thad Vreeland	May
Texas' Deepest Producer Has Heaviest Tubing, Wallace B. Johnson	Aug.
Threadless Drill Pipe Tool Joint, J. E. Kastrop	Oct.
WEATHER — Hurricane Carla, J. E. Kastrop	Oct.
WORKOVERS — Special Rig Tackles Deep Workovers, Lowell A. Murphy	Dec.
Corrosion Causes Unusual Workover, Doyle L. Jones	Dec.
Steel Patch Simplifies Casing Repairs	Dec.

EXPLORATION

EQUIPMENT	Seismic Vibrators at Work in Libya	Sept.
EXPLORATION	Geology of the Philippine Islands, Benjamin M. Gozon	Jan.
FOREIGN FIELDS	Geology of the Philippine Islands, Benjamin M. Gozon	Jan.
	Seismic Vibrators At Work in Libya	Sept.
	Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
	Argentina Bets Heavy on San Jorge Basin	Aug.
SEISMOGRAPH	Seismic Vibrators At Work in Libya	Sept.

PRODUCTION

ACIDIZING	Chemical Treatment for Well Stimulation (Modern Well Completion Series - Part II), Francis N. Harris	Apr.
ARTIFICIAL LIFT	Counterbalance Can Be Determined From Dynamic Unbalanced and Friction Loads, J. R. Norton	Feb.
	Stop Pounding That Pumping Well, J. S. Martin	May
	Sizing Beam Pumping Units Made Easy, A. J. Otte	Sept.
	"See-Saw" System Saves in Two-Well Completion, Blaine Johnston	Aug.
	Lifting Larger Volumes From Deep Duals, Bob G. Murphy	Aug.
AUTOMATIC PRODUCTION CONTROLS	Automated Offshore Gas Platform, Walter A. Hogan	Feb.
	Ultimate in Automation - Push-Button Pumping	Aug.
CEMENTING	Oil Well Cementing Practices and Materials, Phil C. Montgomery and Dwight K. Smith	May
COMPLETION PRACTICES	Permanent-Type, Multiple and Tubingless Completions, T. A. Huber and C. B. Corley, Jr. Part 1	Feb.
	Part 2	Mar
	Chemical Treatment for Well Stimulation (Modern Well Completion Series), Francis N. Harris	Apr.
	Pack-Off Assembly Reduces Gas Life Installation Costs, Kermit Brown, Robert W. Demaldson, and Carlos Canalizo	May
	Oil Well Cementing Practices and Materials, Phil C. Montgomery and Dwight K. Smith	May
	Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
	Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
	Sand Control For Dual Completions	Aug.
	Quadruple Completion Made Inside 5 1/2-in. Casing, Gordon W. Taylor	Aug.
	Texas' Deepest Producer Has Heaviest Tubing, Wallace B. Johnson	Aug.
	First Quadruple For North Louisiana	Oct.
	Slim Holes Save in South Louisiana, Frank Perkins and D. B. McClinton	Nov.
	Save With Slim Holes in Hard Rock Country, Frank M. Pool	Nov.
CONTROLS	Automated Offshore Gas Platform, Walter A. Hogan	Feb.
CONTROL EQUIPMENT	Automated Offshore Gas Platform, Walter A. Hogan	Feb.
	Ultimate in Automation - Push-Button Pumping	Aug.
CORE ANALYSIS	Nuclear Log Interpretation, B. H. Goode, Jr.	Jan.
CORROSION	Special Technique Cut Corrosion Costs, D. R. Fincher	Feb.
	Detect Sulfate Reducers and Evaluate Bactericides in Waterfloods, Frank Yackovich	Apr.
	Corrosion Causes Unusual Workovers, Doyle L. Jones	Dec.

TITLE OF ARTICLE AND AUTHOR	MONTH
ENGINES Rotary Piston Is New Idea in Engines	Jan.
EQUIPMENT Gas Engines Or Electric Motors, John M. Stevenson	Apr.
Differential Liberation Increases Liquid Recovery, J. A. Perkins, Jr.	May
"See-Saw" System Saves In Two-Well Completion, Blaine Johnston	Aug.
EQUIPMENT DEVELOPMENT Converted Engine Exhaust Gas Supplies Make-Up Gas, J. E. Kastrop	May
Pack-Off Assembly Reduces Gas Lift Installation Costs, Kermit Brown, Robert W. Donaldson, Carlos Canalizo	May
FIELD DEVELOPMENTS Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
Argentina Bets Heavy On San Jorge Basin	Aug.
FRACTURING World's Deepest Fracturing Job Performed in Oklahoma	Jan.
Modern Well Completion Series Hydraulic Fracturing, Part 13, Willard Hassebroek and Calvin Saunders	July
Frac Plan Pays Off In Gas Storage, D. M. Ellington	Dec.
GAS INJECTION Where Are We Going With Miscible Displacement?, A. B. Dyes	Feb.
GAS LIFT Converted Engine Exhaust Gas Supplies Make-Up Gas, J. E. Kastrop	May
Pack-Off Assembly Reduces Gas-Lift Installation Costs, Kermit Brown, Robert W. Donaldson, Carlos Canalizo	May
GAS MEASUREMENT Automated Offshore Gas Platform, Walter A. Hogan	Feb.
Estimating Deep Well Deliverability, Paul B. Crawford	Sept.
GEOGRAPHIC Geology of the Philippine Islands, Benjamin M. Gozon	Jan.
Appalachian Completion Practices, George Scott, H. J. Magner, Andy Reid	Sept.
Engineering The Hassi Messaoud Field, E. J. Jacquel	Sept.
Argentina Bets Heavy On San Jorge Basin	Aug.
LOGGING Nuclear Log Interpretation, B. M. Goode, Jr.	Jan.
Tools to Log and Perforate Those Hot Holes	Aug.
How To Interpret Acoustic Bond Logs, C. H. Thurber, E. G. Crow, B. F. Latson	Nov.
Digital Computer: New Exploration Tool, V. S. Tuman, Dorothy Bollman	Nov.
Don't Overlook Permeability Profiles, Wallace B. Johnson	Dec.
MEASUREMENT AND TESTING Estimating Deep Well Deliverability, Paul B. Crawford	Sept.
OIL RECOVERY What's Ahead in Oil Recovery, Dr. Paul B. Crawford	Jan.
Estimating Oil Reserves From Production Data, W. F. Stevens and George Thodos	Feb.
Where Are We Going With Miscible Displacement, A. B. Dyes	Feb.
Could You Recover Stock Tank Vapors At A Profit?, R. E. Weldon, Jr.	May
OUTLOOK What's Ahead in Oil Recovery, Dr. Paul B. Crawford	Jan.
PERFORATING Tools To Log and Perforate Those Hot Holes	Aug.
Tools For Perforating Casing, F. O. Bohn	Nov.
PRODUCING RATES Estimating Deep Well Deliverability, Paul B. Crawford	Sept.
PRODUCTION COSTS Gas Engines Or Electric Motors, John M. Stevenson	Apr.
Why Contract Property Management Keeps Growing, Walter A. Hogan	May
PUMPING Counterbalance Can Be Determined From Dynamic Unbalanced and Friction Loads, J. R. Norton	Feb.
Stop Pounding That Pumping Well, J. S. Martin	May
Sizing Beam Pumping Units Made Easy, A. J. Otte	Sept.
"See-Saw" System Saves in Two-Well Completion, Blaine Johnston	Aug.
Lifting Large Volumes From Deep Duals, Bob G. Murphy	Aug.
Better Lube Oil Care - Big Savings	Dec.
RESERVES Estimating Oil Reserves From Production Data, W. F. Stevens and George Thodos	Feb.
RESERVOIR ENGINEERING Estimating Oil Reserves From Production Data, W. F. Stevens and George Thodos	Feb.
New Method Simplifies Predicting Waterflood Performance, H. C. Slider	Feb.
Waterflood Prediction Comparisons, H. C. Slider	Apr.
Why Contract Property Management Keeps Growing, Walter A. Hogan	May
Curve-Fitting Idea Cuts Material Balance Calculating, L. T. Stanley	Aug.
Estimating Deep Well Deliverability, Paul B. Crawford	Sept.
SALT WATER DISPOSAL Bacteria In Waterflooding: What They Are, What They Mean, Dr. J. M. Sharpley	Aug.
SAND EXCLUSION Sand Control For Dual Completions	Aug.
SECONDARY RECOVERY What's Ahead in Oil Recovery, Dr. Paul B. Crawford	Jan.
There Are We Going With Miscible Displacement, A. B. Dyes	Feb.
New Method Simplifies Predicting Waterflood Performance, H. C. Slider	Feb.
Waterflood Prediction Comparisons, H. C. Slider	Apr.
SEPARATION: OIL, GAS, WATER Automated Offshore Gas Platform, Walter A. Hogan	Feb.
Differential Liberation Increases Liquid Recovery, J. A. Perkins, Jr.	May
STORAGE Could You Recover Stock Tank Vapors At A Profit, R. E. Weldon, Jr.	May
Mixing Pays Off In Lease Tanks, George A. Savary	Aug.
Frac Plan Pays Off In Gas Storage, D. M. Ellington	Dec.
TANK BATTERIES Could You Recover Stock Tank Vapors At A Profit, R. E. Weldon, Jr.	May
Mixing Pays Off In Lease Tanks, George A. Savary	Aug.
TESTING - FORMATION DST Made at 18,000 Feet Without A Hitch, Russell W. Holman	Jan.
Don't Overlook Permeability Profiles, Wallace B. Johnson	Dec.
TREATING Detect Sulfate Reducers and Evaluate Bactericides In Flood Water, Frank Yackovich	Apr.
TUBULAR GOODS Aluminum Flowline Passes Test, William R. Lambert	Sept.
Texas' Deepest Producer Has Heaviest Tubing, Wallace B. Johnson	Aug.
WATER FLOODING Bacteria In Waterflooding: What They Are, What They Mean, Dr. J. M. Sharpley	Feb.
Gas Engines Or Electric Motors, John M. Stevenson	Apr.
Detect Sulfate Reducers and Evaluate Bactericides In Flood Water, Frank Yackovich	Apr.
WEATHER Hurricane Carla, J. E. Kastrop	Oct.
WELL COMPLETIONS Permanent-Type, Multiple and Tubingless Completions, T. A. Huber and C. B. Corley, Jr. (Parts 1 and 2)	Mar.
Oil Well Cementing Practices and Materials, Phil C. Montgomery and Dwight K. Smith	May
Appalachian Completion Practices, George Scott, H. S. Magner, Andy Reid	Sept.
Quadruple Completion Made Inside 5½-In. Casing, Gordon W. Taylor	Aug.
Slim Holes Save In South Louisiana, Frank Perkins and D. B. McClinton	Nov.
Save With Slim Holes in Hard Rock Country, Frank M. Pool	Nov.
WELL SERVICING The Three P's In Oil Well Servicing Today, James W. Wilkins	Mar.
Special Rig Tackles Deep Workovers, Lowell A. Murphy	Dec.
WIRE LINE OPERATIONS Permanent-Type, Multiple and Tubingless Completions, T. A. Huber and C. B. Corley, Jr., Parts 1 and 2	Mar.
Pack-Off Assembly Reduces Gas-Lift Installation Costs, Kermit Brown, Robert W. Donaldson, Carlos Canalizo	May
WORKOVERS Special Rig Tackles Deep Workovers, Lowell A. Murphy	Dec.
Steel Patch Simplifies Casing Repairs	Dec.
Corrosion Causes Unusual Workovers, Doyle L. Jones	Dec.

AUTHOR INDEX

AUTHOR	MONTH
Adams, Clarence S. Air Drilling for Abo Pay	Apr.
Anderson, E. T. What We're Learning From Drilling Steam Wells (2 parts)	Oct.
Bohn, F. O. Tools For Perforating Casing	Nov.
Bollman, Dorothy Digital Computers: New Exploration Tool	Nov.
Brown, Kermit Pack-Off Assembly Reduces Gas-Lift Installation Costs	May
Canalizo, Carlos Pack-Off Assembly Reduces Gas-Lift Installation Costs	May
Corley, C. B., Jr. Permanent-Type, Multiple and Tubingless Completions - Part 1	Feb.
Part 2	Mar.
Crawford, Dr. Paul B. What's Ahead in Oil Recovery	Jan.
Estimating Deep Well Deliverability	Sept.
Crow, E. G. How to Interpret Acoustic Bond Logs	Nov.
Donaldson, Robert W. Pack-Off Assembly Reduces Gas-Lift Installation Costs	May
Duran, R. J. How To Evaluate Mud Desanding	Aug.
Dyes, A. B. Where Are We Going With Miscible Displacement	Feb.
Elkins, L. E. Production Research Must Increase Productivity In The 60's	Jan.
Ellington, D. M. Frac Plan Pays Off In Gas Storage	Dec.
Fincher, D. E. Special Techniques Cut Corrosion Costs	Feb.
Goode, B. M., Jr. Nuclear Log Interpretation	Jan.
Gozon, Benjamin M. Geology of the Philippine Islands	Jan.
Harris, Francis N. Chemical Treatment for Well Stimulation (Modern Well Completion Series - Part II)	Apr.
Hassebroek, Willard E. Modern Well Completion Series Hydraulic Fracturing, Part 13	July
Hogan, Walter, A. Automated Offshore Gas Platform	Feb.
Super-Deep Fishing Job	Mar.
Why Contract Property Management Keeps Growing	May
Holman, Russell W. DST Made at 18,000 Feet Without A Hitch	Jan.
Huber, T. A. Permanent-Type, Multiple and Tubingless Completions - Part 1	Feb.
Part 2	Mar.
Jacquel, J. C. Engineering The Hassi Messaoud Field	Sept.
Johnson, Wallace B. Texas' Deepest Producer Has Heaviest Tubing	Aug.
Don't Overlook Permeability Profiles	Dec.
Johnston, Blaine "See-Saw" System Saves In Two-Well Completion	Aug.
Jones, Doyle L. Corrosion Causes Unusual Workover	Dec.
Kastrop, J. E. John W. Mecom Prepares For A 25,000-Foot Well	Mar.
Converted Engine Exhaust Gas Supplies Make-Up Gas	May
What's Ahead In Contract Drilling	Nov.
Threadless Drill Pipe Tool Joint	Oct.
Hurricane Carla	Oct.
Lambert, William R. Aluminum Flowline Passes Test	Sept.
Langton, Arthur What We're Learning From Drilling Steam Wells (2 parts)	Oct.
Latson, B. F. How To Interpret Acoustic Bond Logs	Nov.

AUTHOR		MONTH
McClinton, D. B.	Slim Holes Save in South Louisiana	Nov.
Magner, H. J.	Appalachian Completion Practices	Sept.
Martin, J. S.	Stop Pounding That Pumping Well	May
Mechem, O. E.	Trends In Drilling Costs: Today and Tomorrow	Jan.
Montgomery, Phil C.	Oil Well Cementing Practices and Materials	May
Murphy, Bob G.	Lifting Larger Volumes From Deep Duals	Aug.
Murphy, Lowell A.	Sidetracks Mark Tough Road In Deep Oklahoma Well	Mar.
	Special Rig Tackles Deep Workovers	Dec.
Norton, J. R.	Counterbalance Can Be Determined From Dynamic, Unbalanced and Friction Loads	Feb.
Otte, A. J.	Sizing Beam Pumping Units Made Easy	Sept.
Perkins, Frank	Slim Holes Save in South Louisiana	Nov.
Perkins, J. A., Jr.	Differential Liberation Increases Liquid Recovery	May
Pool, Frank M.	Save With Slim Holes In Hard Rock Country	Nov.
Reid, Andy	Appalachian Completion Practices	Sept.
Saunders, Calvin D.	Modern Well Completion Series Hydraulic Fracturing, Part 13	July
Savary, George A.	Mixing Pays Off In Lease Tanks	Aug.
Scott, George O.	Appalachian Completion Practices	Sept.
Sharpley, Dr. J. M.	Bacteria In Waterflooding: What They Are, What They Mean	Feb.
Slider, H. C.	New Method Simplifies Predicting Waterflood Performance	Feb.
	Waterflood Prediction Comparisons	Apr.
Smith, Dwight K.	Oil Well Cementing Practices and Materials	May
Sneed, Robert W.	Forecast and Trends In Air/Gas Drilling	Jan.
Stanley, L. T.	Curve-Fitting Idea Cuts Material Balance Calculations	Aug.
Stevens, W. F.	Estimating Oil Reserves From Production Data	Feb.
Stevenson, John M.	Gas Engines Or Electric Motors	Apr.
Taylor, Gordon W.	Quadruple Completion Made Inside 5½-In. Casing	Aug.
Thodos, George	Estimating Oil Reserves From Production Data	Feb.
Thurber, C. H.	How To Interpret Acoustic Bond Logs	Nov.
Tuman, V. S.	Digital Computers: New Exploration Tool	Nov.
Vreeland, Dr. Thad	Dynamic Stresses In Long Drill Pipe Strings	May
Weiss, Walter J.	Chromates Stabilize Shale Control Muds At High Temperatures	Mar.
Weldon, R. E., Jr.	Could You Recover Stock Tank Vapors At A Profit	May
Wilkins, James W.	The Three P's In Oil Well Servicing Today	Mar.
Yackovich, Frank	Detect Sulfate Reducers and Evaluate Bactericides In Flood Water	Apr.

Petro/Chem Engineer

SUBJECT INDEX

TITLE OF ARTICLE AND AUTHOR		MONTH
REFINING		
	Modernization Continues to Keynote U. S. Refining Outlook, M. P. Venema	Jan.
New Markets Hold Key to Canada's Refining Expansion,	E. D. Loughney	Jan.
Capacity to 280 MMT by 1963 Seen in Europe's Refining	Outlook, Robert Andre	Jan.
Petroleum Refining in Latin America, E. W. Schnabel		Jan.
Gas Turbine Applications in HPI, D. F. Bruce		Feb.
How to Specify Gas Turbines, B. L. Short		Feb.
Design for Trouble-Free Gas Turbine Operation,	A. H. Carameros	Feb.
Intake Air System Design for Gas Turbines,	Dwight M. McMakin	Feb.
Mathematics Workshop, Geometry - Part 2, J. M. Marchello		Feb.
How to Calculate Minimum Reflux, R. C. Erbar,	R. S. Joyner and R. N. Maddox	Mar.
An Evaluation of Propane Refrigeration Systems,	J. C. Martin, III and K. D. Robirds	Mar.
How to Turbocharge Gas Engines at a Profit, H. K. Ziebarth		Mar.
Short-Cut Multicomponent Distillation Calculations,	W. A. Fling, Jr. and R. N. Maddox	Mar.
Instrumentation...An Efficient Money-Maker, R. E. Hughes		Apr.
Instrumentation Trends in HPI, A. H. Schutte		Apr.
Instrument Gadgeterring...Sound Practice or Waste of Time?,	Charles R. Miller	Apr.
Instrumentation...Too Much or Too Little?, Edward J. Byrne		Apr.
Closed-Loop Chromatographic Control Optimizes Deethanizer	Performance, David J. Fraade	Apr.
Control Trends in the Integration of Steam and Process	Facilities, W. S. Bowers	Apr.
Distillation...In View of Modern Developments - Part 2,	Chapter 2e, Kenneth F. Gordon and James A. Davies	Apr.
Catalytic Reforming of Naphthas, Dr. Frank G. Ciapetta		May
Distillation...In View of Modern Developments - Part 2,	Chapter 2f, Kenneth F. Gordon and James A. Davies	May
How to Measure Performance of New Investments,	Herbert E. Kroeger	June
Why Make Long-Range Forecasts, Rudolf Czíner		June
Expansion Through Acquisition, M. Robert Ackelsberg	and Arthur L. Freedberg	June
Optimize Cyclic Processes, H. E. Schweyer and F. P. May		June
Distillation...In View of Modern Developments - Part 2,	Chapter 2g, Kenneth F. Gordon and James A. Davies	June
Distillation...In View of Modern Developments - Part 3,	Chapters 1 & 2, Kenneth F. Gordon and James A. Davies	July
Mathematics Workshop, Geometry - Part 3, J. M. Marchello		July
Heat Transfer's Great Potential, James R. Fair		Aug.
Nucleate Pool Boiling, J. W. Westwater		Aug.
Unsteady-State Heat Transfer in Packed Beds, O. K. Crosser		Aug.
Heat Transfer Coefficients for Film Flow, A. E. Dukler		Aug.
Design of Direct-Contact Gas Coolers, James R. Fair		Aug.
Sieve Tray Entrainment and Flooding, James R. Fair		Sept.
Nucleate Pool Boiling - Part 2, J. W. Westwater		Sept.
Mathematics Workshop, Calculus - Part 1, J. M. Marchello		Sept.
Heat Transfer Coefficients for Film Flow, A. E. Dukler		Oct.
What to Consider in Your Tray Design, Kenneth F. Gordon	and James A. Davies	Oct.
Key Data on Electrostatic Coalescing, David E. Jackson	and Jack C. Scott	Oct.
Mathematics Workshop, Calculus - Part 2, J. M. Marchello		Oct.
This New Heater Uses Convective Transfer, John Thurley		Nov.
Evaluating Joint Ventures, Louis R. Bechtel		Nov.
Predetermine Pile Lengths This Modern Way, John A. Focht, Jr.		Nov.
How Much for Maintenance?, E. R. Smoley		Nov.
What to Consider in Fractionator Tray Design,	Kenneth F. Gordon and James A. Davies	Nov.
Mathematics Workshop, Calculus, Part 3, J. M. Marchello		Nov.
Catalytic Alkylation - Part 1, C. R. Cupit, E. C. Jernigan	and J. E. Gwyn	Dec.
Save With Heat Exchanger Design Variables, Arthur J. Makris		Dec.
What to Consider in Your Tray Design - Part 3,	Kenneth F. Gordon and James A. Davies	Dec.

GAS PROCESSING

TITLE OF ARTICLE AND AUTHOR		MONTH
What's Ahead in Natural Gas Processing	in Canada, J. G. Stabback	Jan.
Gas Turbine Applications in HPI, D. F. Bruce		Feb.
How to Specify Gas Turbines, B. L. Short		Feb.
Design for Trouble-Free Gas Turbine Operation, A. H. Carameros		Feb.
Intake Air System Design for Gas Turbines, Dwight M. McMakin		Feb.
Mathematics Workshop, Geometry - Part 2, J. M. Marchello		Feb.
Continued Expansion Seen in Outlook for Natural Gas	Processing, Charles E. Webber	Mar.
How to Calculate Minimum Reflux, R. C. Erbar, R. S. Joyner	and R. N. Maddox	Mar.
An Evaluation of Propane Refrigeration Systems, J. C. Martin, III	and K. D. Robirds	Mar.
How to Turbocharge Gas Engines at a Profit, H. K. Ziebarth		Mar.
Short-Cut Multicomponent Distillation Calculations,	W. A. Fling, Jr. and R. N. Maddox	Mar.
Instrumentation...An Efficient Money-Maker, R. E. Hughes		Apr.
Instrumentation Trends in HPI, A. H. Schutte		Apr.
Instrument Gadgeterring...Sound Practice or Waste of Time?,	Charles R. Miller	Apr.
Instrumentation...Too Much or Too Little?, Edward J. Byrne		Apr.
Closed-Loop Chromatographic Control Optimizes Deethanizer	Performance, David J. Fraade	Apr.
Control Trends in the Integration of Stem and Process Facilities,	W. S. Bowers	Apr.
Distillation...In View of Modern Developments - Part 2,	Chapter 2e, Kenneth F. Gordon and James A. Davies	Apr.
Distillation...In View of Modern Developments - Part 2,	Chapter 2f, Kenneth F. Gordon and James A. Davies	May
How to Measure Performance of New Investments, Herbert E.	Kroeger	June
Why Make Long-Range Forecasts?, Rudolf Czíner		June
Expansion Through Acquisition, M. Robert Ackelsberg	and Arthur L. Freedberg	June
Optimize Cyclic Processes, H. E. Schweyer and F. P. May		June
Distillation...In View of Modern Developments - Part 2,	Chapter 2g, Kenneth F. Gordon and James A. Davies	June
Distillation...In View of Modern Developments - Part 3,	Chapter 1 & 2, Kenneth F. Gordon and James A. Davies	July
Mathematics Workshop, Geometry - Part 3, J. M. Marchello		July
Heat Transfer's Great Potential, James R. Fair		Aug.
Nucleate Pool Boiling, J. W. Westwater		Aug.
Unsteady-State Heat Transfer in Packed Beds, O. K. Crosser		Aug.
Heat Transfer Coefficients for Film Flow, A. E. Dukler		Aug.
Design of Direct-Contact Gas Coolers, James R. Fair		Aug.
Sieve Tray Entrainment and Flooding, James R. Fair		Sept.
Nucleate Pool Boiling - Part 2, J. W. Westwater		Sept.
Mathematics Workshop, Calculus - Part 1, J. M. Marchello		Sept.
Heat Transfer Coefficients for Film Flow, A. E. Dukler		Oct.
What to Consider in Your Tray Design, Kenneth F. Gordon	and James A. Davies	Oct.
Mathematics Workshop, Calculus - Part 2, J. M. Marchello		Oct.
This New Heater Uses Convective Transfer, John Thurley		Nov.
Evaluating Joint Ventures, Louis R. Bechtel		Nov.
How Much for Maintenance?, E. R. Smoley		Nov.

TITLE OF ARTICLE AND AUTHOR	MONTH
What to Consider in Fractionator Tray Design, Kenneth F. Gordon and James A. Davies	Nov.
Mathematics Workshop, Calculus - Part 3, J. M. Marchello	Nov.
Save With Heat Exchanger Design Variables, Arthur J. Makris	Dec.
What to Consider in Your Tray Design - Part 3, Kenneth F. Gordon and James A. Davies	Dec.

PETROCHEMICALS

Rapid Growth to Continue for U. S. Petrochemicals, E. R. Boedeker	Jan.
Petrochemicals in Canada, J. L. Porter	Jan.
50 Years' Progress in 5 Goal for Petrochemicals in Latin America, Russell J. Cameron	Jan.
Oxidation Processes in the Petrochemical Industry - Part 1, Vapor Phase, Peter W. Sherwood	Feb.
Gas Turbine Applications in HPI, D. F. Bruce	Feb.
How to Specify Gas Turbines, B. L. Short	Feb.
Design for Trouble-Free Gas Turbine Operation, A. H. Carameros	Feb.
Intake Air System Design for Gas Turbines, Dwight M. McMakin	Feb.
Mathematics Workshop, Geometry, Part 2, J. M. Marchello	Feb.
How to Calculate Minimum Reflux, R. C. Erbar, R. S. Joyner and R. N. Maddox	Mar.
An Evaluation of Propane Refrigeration Systems, J. C. Martin, III and R. D. Robirds	Mar.
How to Turbocharge Gas Engines at a Profit, H. K. Ziebarth	Mar.
Short-Cut Multicomponent Distillation Calculations, W. A. Fling, Jr. and R. N. Maddox	Mar.
Instrumentation...An Efficient Money-Maker, R. E. Hughes	Apr.
Instrumentation Trends in HPI, A. H. Schutte	Apr.
Instrument Gadgeteering...Sound Practice or Waste of Time?, Charles R. Miller	Apr.
Instrumentation...Too Much or Too Little?, Edward J. Byrne	Apr.
Closed-Loop Chromatographic Control Optimizes Deethanizer Performance, David J. Fraade	Apr.
Control Trends in the Integration of Steam and Process Facilities, W. S. Bowers	Apr.
Distillation...In View of Modern Developments - Part 2, Chapter 2e, Kenneth F. Gordon and James A. Davies	Apr.

TITLE OF ARTICLE AND AUTHOR	MONTH
Distillation...In View of Modern Developments - Part 2, Chapter 2f, Kenneth F. Gordon and James A. Davies	May
How to Measure Performance of New Investments, Herbert E. Kroeger	June
Why Make Long Range Forecasts?, Rudolf Cziner	June
Expansion Through Acquisition, M. Robert Ackelsberg and Arthur L. Freedberg	June
Optimize Cyclic Processes, H. E. Schweyer and F. P. May	June
Distillation...In View of Modern Developments - Part 2, Chapter 2g, Kenneth F. Gordon and James A. Davies	June
Distillation...In View of Modern Developments - Part 3, Chapters 1 & 2, Kenneth F. Gordon and James A. Davies	July
Mathematics Workshop, Geometry - Part 3, J. M. Marchello	July
Heat Transfer's Great Potential, James R. Fair	Aug.
Nucleate Pool Boiling, J. W. Westwater	Aug.
Unsteady-State Heat Transfer in Packed Beds, O. K. Crosser	Aug.
Heat Transfer Coefficients For Film Flow, A. E. Dukler	Aug.
Design of Direct-Contact Gas Coolers, James R. Fair	Aug.
Oxidation Processes in HPI, Liquid Phase, Peter W. Sherwood	Sept.
Sieve Tray Entrainment and Flooding, James R. Fair	Sept.
Nucleate Pool Boiling - Part 2, J. W. Westwater	Sept.
Mathematics Workshop, Calculus - Part 1, J. M. Marchello	Sept.
Petrochemicals Shifting to New Feedstocks, Peter W. Sherwood	Oct.
Heat Transfer Coefficients for Film Flow, A. E. Dukler	Oct.
What to Consider in Your Tray Design, Kenneth F. Gordon and James A. Davies	Oct.
Key Data on Electrostatic Coalescing, David E. Jackson and Jack C. Scott	Oct.
Mathematics Workshop, Calculus - Part 2, J. M. Marchello	Oct.
This New Heater Uses Convective Transfer, John Thurley	Nov.
Evaluating Joint Ventures, Louis R. Bechtel	Nov.
Predetermine Pile Lengths This Modern Way, John A. Focht, Jr.	Nov.
How Much for Maintenance?, E. R. Smoley	Nov.
What to Consider in Fractionator Tray Design, Kenneth F. Gordon and James A. Davies	Nov.
Mathematics Workshop, Calculus - Part 3, J. M. Marchello	Nov.
Save With Heat Exchanger Design Variables, Arthur J. Makris	Dec.
What to Consider in Your Tray Design - Part 3, Kenneth F. Gordon and James A. Davies	Dec.

AUTHOR INDEX

AUTHOR	MONTH
Ackelsberg, M. Robert — Expansion Through Acquisition	June
Andre, Robert — Capacity to 280 MMT by 1963 Seen in Outlook for Refining in Europe	Jan.
Bechtel, Louis R. — Evaluating Joint Ventures	Nov.
Boedeker, E. R. — Rapid Growth to Continue for U. S. Petrochemicals	Jan.
Bowers, W. S. — Control Trends in the Integration of Steam and Process Facilities	Apr.
Bruce, D. F. — Gas Turbine Applications in HPI	Feb.
Byrne, Edward J. — Instrumentation...Too Much or Too Little?	Apr.
Cameron, Russell J. — 50 Years' Progress in 5 Goal for Petrochemicals in Latin America	Jan.
Carameros, A. H. — Design for Trouble-Free Gas Turbine Operation	Feb.
Ciapetta, Frank G. — Catalytic Reforming	May
Crosser, O.K. — Unsteady-State Heat Transfer in Packed Beds	Aug.
Cupit, C. R. — Catalytic Alkylation - Part 1	Dec.
Cziner, Rudolf — Why Make Long-Range Forecasts	June
Davies, James A. — Distillation...In View of Modern Developments - Part 2, Chapter 2e	Apr.
Distillation...In View of Modern Developments - Part 2, Chapter 2f	May
Distillation...In View of Modern Developments - Part 2, Chapter 2g	June
Distillation...In View of Modern Developments - Part 3, Chapters 1 & 2	July
What to Consider in Your Tray Design - Part 1	Oct.
What to Consider in Your Tray Design - Part 2	Nov.
What to Consider in Your Tray Design - Part 3	Dec.
Dukler, A. E. — Heat Transfer Coefficients for Film Flow - Part 1	Aug.
Heat Transfer Coefficients for Film Flow - Part 2	Oct.
Erbar, R. C. — How to Calculate Minimum Reflux	Mar.
Fair, James R. — Design of Direct-Contact Gas Coolers	Aug.
Heat Transfer's Great Potential	Aug.
Sieve Tray Entrainment and Flooding	Sept.
Fling, Wayne A., Jr. — Short-Cut Multicomponent Distillation Calculations	Mar.
Focht, John A., Jr. — Predetermine Pile Lengths This Modern Way	Nov.
Fraade, David J. — Closed-Loop Chromatographic Control Optimizes Deethanizer Performance	Apr.
Freedberg, Arthur L. — Expansion Through Acquisition	June
Gordon, Kenneth F. — Distillation...In View of Modern Developments - Part 2, Chapter 2e	Apr.
Distillation...In View of Modern Developments - Part 2, Chapter 2f	May
Distillation...In View of Modern Developments - Part 2, Chapter 2g	June
Distillation...In View of Modern Developments - Part 3, Chapters 1 & 2	July
What to Consider in Your Tray Design - Part 1	Oct.
What to Consider in Your Tray Design - Part 2	Nov.
What to Consider in Your Tray Design - Part 3	Dec.
Gwyn, J. E. — Catalytic Alkylation - Part 1	Dec.
Hughes, Robert E. — Instrumentation...An Efficient Money-Maker	Apr.
Jackson, David E. — Key Data on Electrostatic Coalescing	Oct.
Jernigan, E. C. — Catalytic Alkylation - Part 1	Dec.
Joyner, R. S. — How to Calculate Minimum Reflux	Mar.
Kroeger, Herbert E. — How to Measure Performance of New Investments	June
Loughney, E. D. — New Markets Hold Key to Canada's Refining Expansion	Jan.
McMakin, Dwight M. — Intake Air System Design for Gas Turbines	Feb.
Maddox, Robert N. — How to Calculate Minimum Reflux	Mar.
Short-Cut Multicomponent Distillation Calculations	Mar.
Makris, Arthur J. — Save With Heat Exchanger Design Variables	Dec.
Marchello, J. M. — Mathematics Workshop, Geometry - Part 2	Feb.
Mathematics Workshop, Geometry - Part 3	July
Mathematics Workshop, Calculus - Part 1	Sept.
Mathematics Workshop, Calculus - Part 2	Oct.
Mathematics Workshop, Calculus - Part 3	Nov.
Martin, J. C., III — An Evaluation of Propane Refrigeration Systems	Mar.
May, F. P. — Optimize Cyclic Processes	June
Miller, Charles R. — Instrument Gadgeteering...Sound Practice or Waste of Time?	Apr.
Miller, Ernest P. — 50 Years' Progress in 5 Goal for Petrochemicals in Latin America	Jan.
Porter, J. L. — Petrochemicals in Canada	Jan.
Robirds, R. D. — An Evaluation of Propane Refrigeration Systems	Mar.
Schnabel, E. W. — Petroleum Refining in Latin America	Jan.
Schutte, A. Henry — Instrumentation Trends in HPI	Apr.
Schweyer, H. E. — Optimize Cyclic Processes	June
Scott, Jack C. — Key Data on Electrostatic Coalescing	Oct.
Sherwood, Peter W. — Oxidation Processes in the Petrochemical Industry - Part 1	Feb.
Oxidation Processes in HPI	Sept.
Petrochemicals Shifting to New Feedstocks	Oct.
Short, B. L. — How to Specify Gas Turbines	Feb.
Smoley, E. R. — How Much for Maintenance?	Nov.
Stabback, Jack — What's Ahead in Natural Gas Processing in Canada	Jan.
Thurley, John — This New Heater Uses Convective Transfer	Nov.
Venema, M. P. — Modernization Continues to Keynote U. S. Refining Outlook	Jan.
Weber, Charles E. — Continued Expansion Seen in Outlook for Natural Gas Processing	Mar.
Westwater, J. W. — Nucleate Pool Boiling	Aug.
Nucleate Pool Boiling - Part 2	Sept.
Ziebarth, H. K. — How to Turbocharge Gas Engines at a Profit	Mar.

SUBJECT INDEX

TITLE OF ARTICLE AND AUTHOR	MONTH
AUTOMATION Automation Provides Faster Tanker Loading at Bougie	June
Computer Expedites Gas Accounting for NGPL	Apr.
Controls Check List	Feb.
Instrumentation, Controls, And Automation...Part 4: Telemetering, Max T. Nigh	Jan.
Instrumentation, Controls, And Automation...Part 5: Telemetering, Max T. Nigh	Apr.
Instrumentation. Controls, And Automation...Part 6: Telemetering, Max T. Nigh	May
Pipeline Controls Data	Feb.
Satellite Stations...Automation Solve Capacity Problem For Service, V. L. Rupe	Apr.
After Data Logging - What Next? George H. Beck	Dec.
CATHODIC PROTECTION Measurement of Pipeline Coating Leakage Conductance in Place, Part 1, Marshall E. Parker	Mar.
Measurement of Pipeline Coating Leakage Conductance in Place, Part 2, Marshall E. Parker	Apr.
New Method For Locating Electrical Shorts and Open Couplings, Darrel D. Byerley	Mar.
Cathodic Protection System Checked From Air J. E. Fairman	Dec.
COATING & WRAPPING Design Details of Alberta-California Line Unfolding, Frank H. Love	Mar.
Guide to Protective Coatings For Pipe	Feb.
New Cleaning Method Avoids Damage To Internal Coating, David C. Palm	May
Quantities For Coating With Primer and Enamel	Feb.
Requirements for Coating and Wrapping Pipe With Felt, Glass Fiber, or Kraft Paper	Feb.
Requirements for Wrapping Pipe With Polyethylene Tape	Feb.
PG&E Keeps It's Date With D-Day Frank H. Love and Leslie O. Rowland	Nov.
COMMUNICATIONS Pipeline Communications Data, L. E. Cook	Feb.
Satellite Stations...Automation Solve Capacity Problem For Service, V. L. Rupe	Apr.
Technical DBM Data	Feb.
Plan Ahead for Communications, B. L. Arnold	Sept.
PG&E Keeps It's Date With D-Day Frank H. Love and Leslie O. Rowland	Nov.
COMPRESSORS, GAS Engine Foundations - Design, Theory, Construction, D. A. Nesterenko	June
Temperature Control Checking Device	June
Engine Foundations - Design, Theory, Construction, Part 1, D. A. Nesterenko	May
Natural Gas Compressibility Factors	Feb.
Piston Displacement in Cu Ft For Various Diameters and Strokes, Lester C. Sullivan	Feb.
Volumetric Efficiency vs. Compression Ratio For Various Clearances, Lester C. Sullivan	Feb.
Compressor Station Design Fits Special Need	July
NGPL Solves Engine Lubrication	Sept.
PG&E Keeps It's Date With D-Day Frank H. Love and Leslie O. Rowland	Nov.
COMPUTERS Computer Expedites Gas Accounting For NGPL	Apr.
CONSTRUCTION Austria's Unusual Bridge, Alfred Ptak	June
Engine Foundations - Design, Theory, Construction, D. A. Nesterenko	June
Automatic Field Welding of 36-In. Pipe in Fixed Position	June
Construction Equipment Survey, Frank H. Love	Mar.
Design Details of Alberta-California Line Unfolding, Frank H. Love	Mar.
Engine Foundations - Design, Theory, Construction, Part 1, D. A. Nesterenko	May
Excavation Volumes In Trenches	Feb.
New Cleaning Method Avoids Damage To Internal Coating, David C. Palm	May
Quantities For Coating With Primer And Enamel	Feb.
Requirements For Wrapping Pipe With Polyehtylene Tape	Feb.
Spoil-Bank Problem Solved...In Shallow-Water Trenching, Roel McDaniel	Feb.
Submarine Pipeline Construction Methods, Part 2, John G. Bomba	Jan.
Welding Procedures	Feb.
Esso Refines Automatic Arc-Welding J. W. Nelson, G. E. Faulkner, P. J. Rieppel, H. C Cook	Aug.
"Chloe" Pipeline Laid in Louisiana	Aug.
Six Months Ahead of Schedule, P. A. MacCormack	Sept.
How To Design Weight Coating With Computer, C. H. Klohn	Sept.
What Is Russia Really Doing About Gas Lines? Frank H. Love	Sept.
Defiant Alaskan "Arm" Is Defeated, K. M. McClain	Oct.
XC-60 = Strength + Weldability	Oct.
Giant Gas Line is Production-Line Coated	Oct.
PG&E Keeps It's Date With D-Day Frank H. Love and Leslie O. Rowland	Nov.
Oil Lines Gain, Overall Construction Drops Frank H. Love	Nov.
Pipeline Built or Underway	Nov.
Pipelines Proposed or Planned	Nov.
Oil-Hungry Europe Pushes Pipelines, Mario Monti	Nov.
Despite Weather, Canada Has Historical Year Leslie O. Rowland	Dec.
South America: Scene of Surging Construction J. E. Rassmuss	Dec.
CONTROLS Automation Provides Faster Tanker Loading At Bougie	June
Temperature Control Checking Device	June
Controls Check List	Feb.
Instrumentation, Controls, and Automation...Part 4: Telemetering, Max T. Nigh	Jan.
Instrumentation, Controls, and Automation...Part 5: Telemetering, Max T. Nigh	Apr.
Instrumentation, Controls, and Automation...Part 6: Telemetering, Max T. Nigh	May
Mid-American Checks Out Control Equipment	May
Pipeline Controls Data	Feb.
Satellite Stations...Automation Solve Capacity Problem For Service, V. L. Rupe	Apr.
Remote Control of Shoshone System Lee B. Tully and Robert L. Deutsch	July
Pipeline Fundamentals, Telemetering, Part 7: Max T. Nigh	July
Pipeline Fundamentals, Telemetering, Part 8: Max T. Nigh	Sept.
Special System Controls Special Line Richard Gode	Oct.
Pipeline Fundamentals, Telemetering, Part 9: Max T. Nigh	Oct.
PG&E Keeps It's Date With D-Day Frank H. Love and Leslie O. Rowland	Nov.
Cathodic Protection System Checked From Air J. E. Fairman	Dec.
After Data Logging - What Next?, George H. Beck	Dec.
CORROSION Corrosion Control Methods	Feb.
The Electromotive Series	Feb.
Guide To Protective Coatings For Pipe	Feb.
Measurement of Pipeline Coating Leakage Conductance In Place, Part 1, Marshall E. Parker	Mar.
Measurement of Pipeline Coating Leakage Conductance In Place, Part 2, Marshall E. Parker	Apr.
New Method For Locating Electrical Shorts and Open Couplings, Darrel D. Byerley	Mar.
Requirements For Coating and Wrapping Pipe With Felt, Glass Fiber, or Kraft Paper	Feb.
Transwestern Makes On-The-Spot Sulfur Analysis, William A. Garratt	May
Types of Corrosion	Feb.
DESIGN Design for Trouble-Free Gas Turbine Operation, Alexander H. Carameros	June
Compressor Station Design Fits Special Need	July
DISPATCHING Batching "Pig" Reduces Interface 70%	Feb.
ECONOMICS Gas Transmission Costs	Feb.
ENGINES How to Reach Inaccessible Engine Parts With Solvents	Apr.
Maximum Profit With Minimum Investment, Alva C. Smith	May
FLOW CALCULATIONS Weymouth Gas Flow Formula Has Limitations, R. N. Parekh	June
Construction Equipment Survey, Frank H. Love	Mar.
Instrumentation, Controls, and Automation...Part 4: Telemetering, Max T. Nigh	Jan.
Instrumentation, Controls, and Automation...Part 5: Telemetering, Max T. Nigh	Apr.
Instrumentation, Controls, and Automation...Part 6: Telemetering, Max T. Nigh	May
Proper Service Minimizes Repairs, A. L. Lundberg	Feb.
GAS CLEANING Transwestern Makes On-The-Spot Sulfur Analysis, William A. Garratt	May
GAS TREATING Dust in Gas Streams - Part I: Physics of Small Particles, N. M. Wiederhorn, N. F. Surprenant, W. J. Smith and J. R. Ehrenfeld	June
Transwestern Makes On-The-Spot Sulfur Analysis, William A. Garratt	May
Dust in Gas Streams - Part 2: Instruments for Collecting and Identifying Particles, N. M. Wiederhorn, N. F. Surprenant, W. J. Smith and J. R. Ehrenfeld	July
Dust in Gas Streams - Part 3A: A. W. Doyle, N. M. Wiederhorn and A. Swan	Aug.
Dust in Gas Streams - Part 3B: A. W. Doyle, N. M. Wiederhorn and A. Swan	Oct.
GENERAL Contractors Viewpoint for 1961: Another Year for Skill, Ingenuity and Courage, Jack S. Gray	Jan.
Outlook for 1961: Pipeline Management Exudes Confidence	Jan.
Pipeline Contractors Directory, 1961 Edition	Jan.
Program: Pipe Line Contractors Annual Convention, San Francisco, January 14-18	Jan.
What Can The Pipeline Industry Expect Under the Kennedy Administration, E. E. Holmes, Jr.	Feb.
GEOGRAPHIC Despite Weather, Canada Has Histroical Year, Leslie O. Rowland	Dec.
South America: Scene of Surging Construction J. E. Rassmuss	Dec.
HANDBOOK DATA SHEETS Manometer Factors For Hg Type Flow Meters	Apr.
Pipeline Handbook Data Sheet	Oct.
Data Sheet: Purity of Methyl Alcohol	Dec.
INSTRUMENTATION Automation Provides Faster Tanker Loading at Bougie	June
Computer Expedites Gas Accounting For NGPL	Apr.
Controls Chack List	Feb.
Instrumentation, Controls, and Automation...Part 4: Telemetering, Max T. Nigh	Jan.
Instrumentation, Controls, and Automation...Part 5: Telemetering, Max T. Nigh	Apr.
Instrumentation, Controls, and Automation...Part 6: Telemetering, Max T. Nigh	May
Pipeline Controls Data	Feb.
Satellite Stations...Automation Solve Capacity Problem for Service, V. L. Rupe	Apr.

TITLE OF ARTICLE AND AUTHOR	MONTH
Remote Control of Shoshone System Lee B. Tully and Robert L. Deutsch	July
Pipeline Fundamentals - Telemetering, Part 7: Max T. Nigh	July
Pipeline Fundamentals - Telemetering, Part 8: Max T. Nigh	Sept.
Pipeline Fundamentals - Telemetering, Part 9: Max T. Nigh	Oct.
After Data Logging - What Next? George H. Beck	Dec.
INTERNATIONAL PIPELINING Austria's Unusual Bridge, Alfred Ptak	June
Automation Provides Faster Tanker Loading at Bougie	June
Six Months Ahead of Schedule, P. A. MacCormack	Sept.
What Is Russia Really Doing About Gas Lines? Frank H. Love	Sept.
LPG PIPELINES Mid-America Checks Out Control Equipment	May
LINE PIPE Pipeline Research Reaches Milestone, Frank H. Love	May
Working Pressures For Gas Piping	Feb.
Working Pressures for Oil Transportation Pipe	Feb.
MAINTENANCE & REPAIR How to Overhaul A Gas Turbine, Robert Burke	May
How to Reach Inaccessible Engine Parts With Solvents	Apr.
Maintenance of Oil Pipelines, A. M. Hill	Feb.
New Cleaning Method Avoids Damage to Internal Coating, David C. Palm	May
Proper Service Minimizes Repairs, A. L. Lundberg	Feb.
Regular Maintenance Cuts Breakdowns, Frank H. Love	Aug.
How To Keep a Fleet Rolling, M. W. Beech	Sept.
NGPL Solves Engine Lubrication	Sept.
Cathodic Protection System Checked From Air, J. E. Fairman	Dec.
MEASUREMENT Gas Measurement is on the "Skid", Frank H. Love	June
Manometer Factors For Hg Type Flow Meters	Apr.
Orifice Meter Flow Calculations	Feb.
Reynolds' Number and Expansion Factor Data	Feb.
METERING, GAS Gas Measurement is on the "Skid", Frank H. Love	June
Manometer Factors For Hg Type Flow Meters	Apr.
METERING, OIL Running-Basis Meter Proving	Aug.
MICROWAVE Computer Expedites Gas Accounting For NGPL	Apr.
Pipeline Communications Data, L. E. Cook	Feb.
Technical DBM Data	Feb.
Plan Ahead for Communications, B. L. Arnold	Sept.
OPERATIONS Dust in Gas Streams - Part 1: Physics of Small Particles, N. M. Wiederhorn, N. F. Surprenant, W. J. Smith and J. R. Ehrenfeld	June
Design for Trouble-Free Gas Turbine Operation, Alexander H. Carameros	June
Control of Surges in Liquid Pipelines, G A. Lundberg	Feb.
Determining Adiabatic Head for 0.60 Gravity Gas	Feb.
Displacement of Gas in Pipeline	Feb.
Gas Transmission Costs	Feb.
Locking Device Protects Valves	Apr.
Pipe Fill Table for Gas	Feb.
Volume of Crude Required to Fill A Pipeline	Feb.
NGPL Solves Engine Lubrication	Sept.
Management Game In Gas Transmission, Edward Gordon	Dec.
OUTLOOK Contractors Viewpoint for 1961: Another Year for Skill, Ingenuity and Courage, Jack S. Gray	Jan.
Outlook for 1961: Pipeline Management Exudes Confidence	Jan.
Oil Lines Gain, Overall Construction Drops Frank H. Love	Nov.
Pipelines Built or Underway	Nov.
Pipelines Proposed or Planned	Nov.
Oil-Hungry Europe Pushes Pipelines, Mario Monti	Nov.
PIPE PROTECTION Corrosion Control Methods	Feb.
Design Details of Alberta-California Line Unfolding, Frank H. Love	Mar.
The Electromotive Series	Feb.
Guide to Protective Coatings for Pipe	Feb.
Measurement of Pipeline Coating Leakage Conductance In Place - Part 1, Marshall E. Parker	Mar.
Measurement of Pipeline Coating Leakage Conductance In Place - Part 2, Marshall E. Parker	Apr.
New Cleaning Method Avoids Damage to Internal Coating, David C. Palm	May
New Method for Locating Electrical Shorts and Open Coupligs, Darrel D. Byerley	Mar.
Quantities for Coating With Primer and Enamel	Feb.
Requirements for Coating and Wrapping Pipe With Felt, Glass Fiber, or Kraft Paper	Feb.
Requirements for Wrapping Pipe With Polyethylene Tape	Feb.
Types of Corrosion	Feb.
How to Design Weight Coating With Computer C. H. Klohn	Sept.
Giant Gas Line is Production-Line Coated	Oct.
PIPELINE FUNDAMENTALS Instrumentation, Controls, and Automation,...Part 4: Telemetering, Max T. Nigh	Jan.
Instrumentation, Controls, and Automation...Part 5: Telemetering, Max T. Nigh	Apr.
Instrumentation, Controls, and Automation...Part 6: Telemetering, Max T. Nigh	May
Instrumentation, Controls, and Automation...Part 7: Telemetering, Max T. Nigh	July
Pipeline Fundamentals - Telemetering, Part 8: Max T. Nigh	Sept.
Pipeline Fundamentals - Telemetering, Part 9: Max T. Nigh	Oct.
PUMPING EQUIPMENT Unusual Booster: Inverted Bowl Turbine Pump, David D. Pickrell	June
Centrifugal Pump Performance (Brake Horsepower vs. Net Head)	Feb.
PUMPING STATIONS Unusual Booster: Inverted Bowl Turbine Pump, David D. Pickrell	June
Control of Surges in Liquid Pipelines, G. A. Lundberg	Feb.
REMOTE CONTROL Unusual Booster: Inverted Bowl Turbine Pump, David D. Pickrell	June
Computer Expedites Gas Accounting for NGPL	Apr.
Satellite Stations...Automation Solve Capacity Problem for Service, V. L. Rupe	Apr.
RESEARCH Pipeline Research Reaches Milestone, Frank H. Love	May
RIVER CROSSINGS Design Details of Alberta-California Line Unfolding, Frank H. Love	Mar.
How to Design Weight Coating With Computer C. H. Klohn	Sept.
TANKAGE Tank Capacity Chart	Feb.
TURBINES Design for Trouble-Free Gas Turbine Operation, Alexander H. Carameros	June
How to Overhaul A Gas Turbine, Robert Burke	May
UNDERWATER CROSSINGS Defiant Alaskan "Arm" Is Defeated K. M. McClain	Oct.
UNDERWATER PIPELINES Spoil-Bank Problem Solved...In Shallow-Water Trenching, Ruel McDaniel	Feb.
Submarine Pipeline Construction Methods, Part 2, John G. Bomba	Feb.
Turnagain Arm Crossing Fails...Contractor Will Try Again, K. M. McClain	Jan.
"Chlaw" Pipeline Laid in Louisiana	Aug.
WELDING Automatic Field Welding of 36-In. Pipe In Fixed Position	June
Pipeline Research Reaches Milestone, Frank H. Love	May
Welding Procedures	Feb.
Esso Refines Automatic Arc-Welding J. W. Nelson, G. E. Faulkner, P. J. Rieppel, and H. C. Cook	Aug.
XC-60 = Strength + Weldability	Oct.

PIPELINE HANDBOOK

DESIGN, CONSTRUCTION, AND MATERIALS Working Pressures for Gas Transmission Pipe	Feb.
Working Pressures of Oil Transportation Pipe	Feb.
Excavation Volumes in Trenches	Feb.
Welding Procedures	Feb.
GAS COMPRESSION DATA Natural Gas Compressibility Factors	Feb.
Volumetric Efficiency vs. Compression Ratio for Various Clearances	Feb.
Piston Displacement in Cu Ft for Various Diameters and Strokes	Feb.
GAS TRANSMISSION OPERATIONS Displacement of Gas in Pipeline	Feb.
Determining Adiabatic Head for 0.60 Gravity Gas	Feb.
Gas Transmission Costs	Feb.
INSTRUMENTS, CONTROLS, COMMUNICATIONS Pipeline Communications Data	Feb.
Technical DBM Data	Feb.
Pipeline Control Data	Feb.
Controls Check List	Feb.
MAINTENANCE Maintenance of Oil Pipelines	Feb.
NATURAL GAS MEASUREMENT Orifice Meter Flow Calculations	Feb.
Reynolds Number and Expansion Factor Data	Feb.
PIPE PROTECTION Types of Corrosion	Feb.
The Electromotive Series	Feb.
Corrosion Control Methods	Feb.
Guide to Protective Coatings for Pipe	Feb.
Requirements for Coating and Wrapping Pipe with Felt, Glass Fiber, or Kraft Paper	Feb.
Quantities for Coating with Primer and Enamel	Feb.
Requirements for Wrapping Pipe with Polyethylene Tape	Feb.
PUMPING CRUDE AND PRODUCTS Centrifugal Pump Performance (Brake Horsepower vs. Net Head)	Feb.
Control of Surges in Pipelines	Feb.
STORAGE CAPACITY OF PIPELINES Pipe Fill Table for Gas	Feb.
Volume of Crude Required to Fill a Pipeline	Feb.
STORAGE (CRUDE & PRODUCTS) Tank Capacity Chart	Feb.

AUTHOR INDEX

TITLE OF ARTICLE AND AUTHOR	MONTH
Arnold, B. L. Plan Ahead For Communications	Sept.
Beck, George H. After Data Logging - What Next?	Dec.
Beech, M. W. How To Keep A Fleet Rolling	Sept.
Bomba, John G. Submarine Pipeline Construction Methods, Part 2	Feb.
Burke, Robert How To Overhaul A Gas Turbine	Mar.
Byerley, Darrel D New Method For Locating Electrical Shorts and Open Couplings	Mar.
Carameros, Alexander H. Design For Trouble-Free Turbine Operation	June
Cook, H. C. Esso Refines Automatic Arc-Welding	Aug.
Cook, L. E. Pipeline Communications Data	Feb.
Deutsch, Robert L. Remote Control Of Shoshone System	July
Doyle, A. W. Dust in Gas Streams, Part 3A	Aug.
Dust in Gas Streams, Part 3B	Oct.
Ehrenfeld, J. R. Dust in Gas Streams - Part 1: Physics of Small Particles	June
Fairman, J. E. Cathodic Protection System Checked From Air	Dec.
Faulkner, G. E. Esso Refines Automatic Arc-Welding	Aug.
Garrett, William A. Transwestern Makes On-The-Spot Sulfur Analysis	May
Gatlin, Carl Natural Gas Compressibility Factor Charts	Feb.
Gode, Richard Special System Controls Special Line	Oct.
Gordon, Edward Management Game in Gas Transmission	Dec.
Gray, Jack S. Contractors Viewpoint For 1961: Another Year For Skill, Ingenuity and Courage	Jan.
Halmos, E. E., Jr. What Can The Pipeline Industry Expect Under The Kennedy Administration	Feb.
Hill, A. M. Maintenance Of Oil Pipelines	Feb.
Klohn, C. H. How To Design Weight Coating With Computer	Sept.
Love, Frank H. Construction Equipment Survey	Mar.
Design Details of Alberta-California Line Unfolding	Mar.
Pipeline Research Reaches Milestone	May
Gas Measurement is on the Skid	June
Regular Maintenance Cuts Breakdowns	Aug.
What is Russia Really Doing About Gas Lines?	Sept.
Oil Lines Gain, Overall Constructions Drops	Nov.
PG&E Keeps It's Date With D-Day	Nov.
Lundberg, A. L. Proper Service Minimizes Repairs	Feb.
Lundberg, G. A. Control of Surges in Liquid Pipelines	Feb.
MacCormack, P. A. Six Months Ahead of Schedule	Sept.
McClain, K. M. Turnagain Arm Crossing Fails...Contractor Will Try Again	Jan.
Defiant Alaskan "Arm" Is Defeated	Oct.
McDaniel, Ruel Spoil-Bank Problem Solved...In Shallow-Water Trenching	Feb.
Monti, Mario Oil-Hungry Europe Pushes Pipelines	Nov.
Moore, Charles B. Dust in Gas Streams: Part 2: Instruments for Collecting and Identifying Particles	July
Nelson, J. W. Esso Refines Automatic Arc-Welding	Aug.
Nesterenko, D. A. Engine Foundations - Design, Theory, Construction	May
Engine Foundations - Design, Theory, Construction: Part 2	June
Nigh, Max T. Instrumentation, Controls, and Automation Part 4: Telemetering	Jan.
Part 5: Telemetering	Apr.
Part 6: Telemetering	May
Part 7: Telemetering	July
Part 8: Telemetering	Sept.
Part 9: Telemetering	Oct.
Palm, David C. New Cleaning Method Avoids Damage to Internal Coating	May
Parekh, R. H. Weymount Gas Flow Formula Has Limitations	June
Parker, Marshall E. Measurement Of Pipeline Coating Leakage Conductance, Part 1	Mar.
Measurement Of Pipeline Coating Leakage Conductance, Part 2	Apr.
Pickrell, David D. Unusual Booster: Inverted Bowl Turbine Pump	June
Ptak, Alfred Austria's Unusual Bridge	June
Rassmuss, J. E. South America: Scene of Surging Construction	Dec.
Rieppel, P. J. Esso Refines Automatic Arc-Welding	Aug.
Rowland, Leslie O. PG&E Keeps It's Date With D-Day	Nov.
Despite Weather, Canada Has Historical Year	Dec.
Rupe, V. L. Satellite Stations...Automation Solve Capacity Problem for Service	Apr.
Smith, W. J. Dust in Gas Streams - Part 1: Physics of Small Particles	June
Dust in Gas Streams - Part 2: Instruments for Collecting and Identifying Particles	July
Sullivan, Lester C. Volumetric Efficiency vs Compression Ratio For Various Clearances	Feb.
Piston Displacement In Cu Ft For Various Diameters and Strokes	Feb.
Surpernant, N. F. Dust in Gas Streams - Part 1: Physics of Small Particles	June
Dust in Gas Streams - Part 2: Instruments for Collecting and Identifying Particles	July
Swan, A. Dust in Gas Streams - Part 3A	Aug.
Dust in Gas Streams - Part 3B	
Tully, Lee B. Remote Control of Shoshone System	July
Wiederhorn, N. M. Dust in Gas Streams - Part 1: Physics of Small Particles	June
Dust in Gas Streams - Part 2: Instruments for Collecting and Identifying Particles	July
Dust in Gas Streams - Part 3A	Aug.
Dust in Gas Streams - Part 3B	Oct.